Innovation and Opportunities Conference

Steve Clarke, Deputy Associate Administrator
Aeronautics Research Mission Directorate
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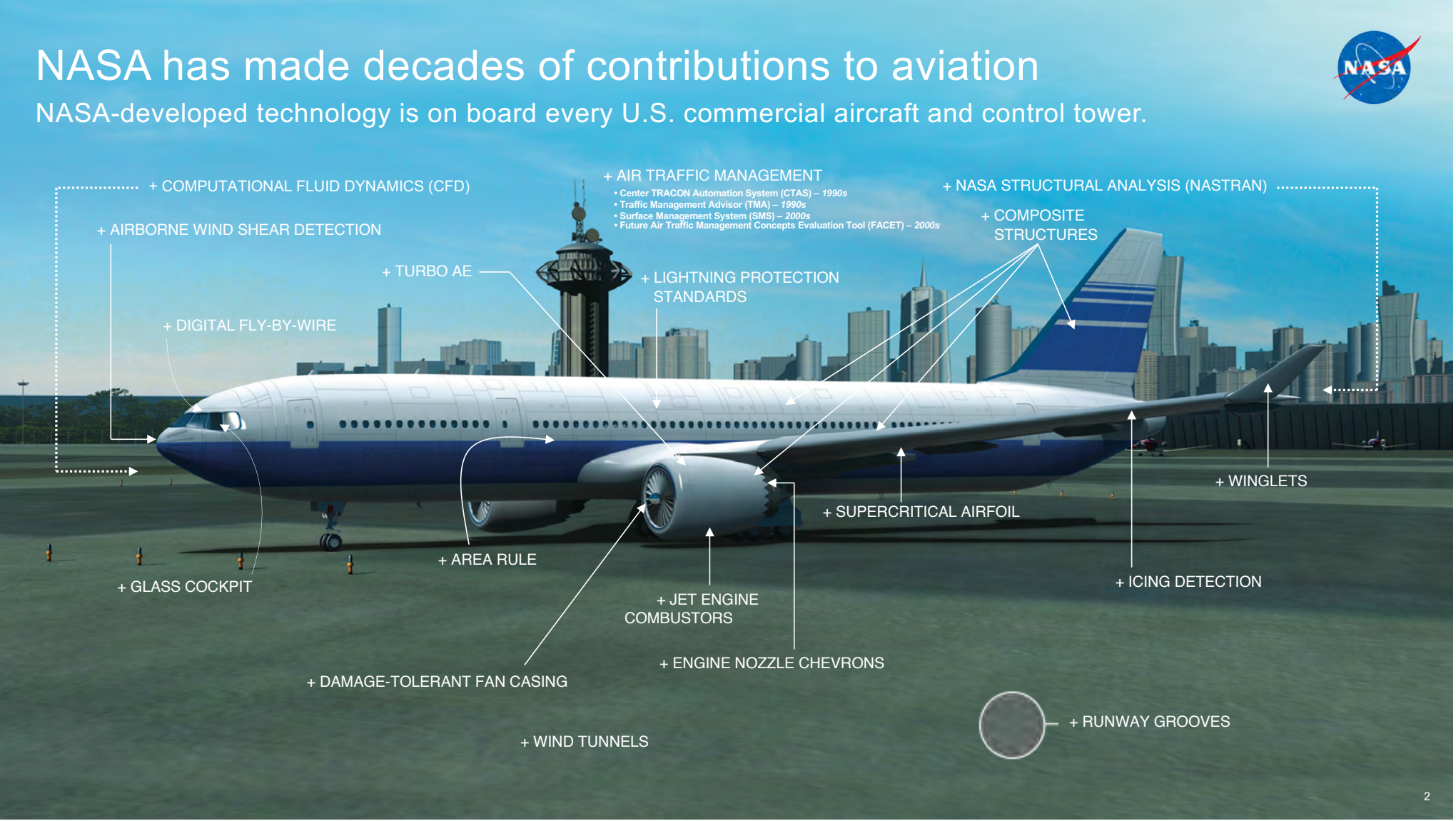
NASA has made decades of contributions to aviation

NASA-developed technology is on board every U.S. commercial aircraft and control tower.



NASA Aeronautics uses six strategies to guide its research

Safe, Efficient Growth in Global Operations

- Achieve safe, scalable, routine, high-tempo airspace access for all users

Innovation in Commercial Supersonic Aircraft

- Achieve practical, affordable commercial supersonic air transport

Ultra-Efficient Subsonic Transports

- Realize revolutionary improvements in economics and environmental performance for subsonic transports with opportunities to transition to alternative propulsion and energy

Safe, Quiet, and Affordable Vertical Lift Air Vehicles

- Realize extensive use of vertical lift vehicles for transportation and services including new missions and markets

In-Time System-Wide Safety Assurance

- Predict, detect and mitigate emerging safety risks throughout aviation systems and operations

Assured Autonomy for Aviation Transformation

- Safely implement autonomy in aviation applications


QUIET SUPERSONIC FLIGHT
OVERLAND


AIRSPACE
MANAGEMENT

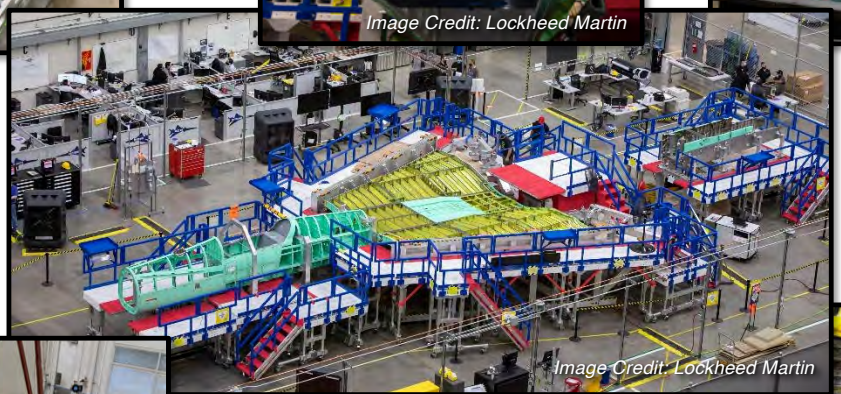

NEXT GENERATION AIRLINER


ADVANCED AIR MOBILITY

X-59 Low Boom Flight Demonstrator Development

Chines

Vertical Tail

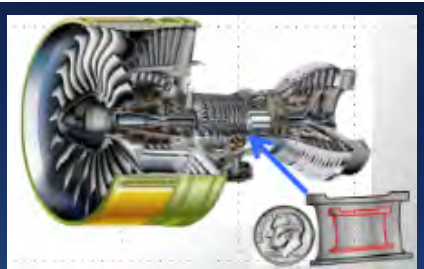


Nose

X-59 Engine in Shipping Can

X-59 GE-414-100 Engine

Next Generation Subsonic Transport Strategy



Small Core Gas Turbine
5%-10% fuel burn benefit

Electrified Aircraft Propulsion
~5% fuel burn and maintenance benefit

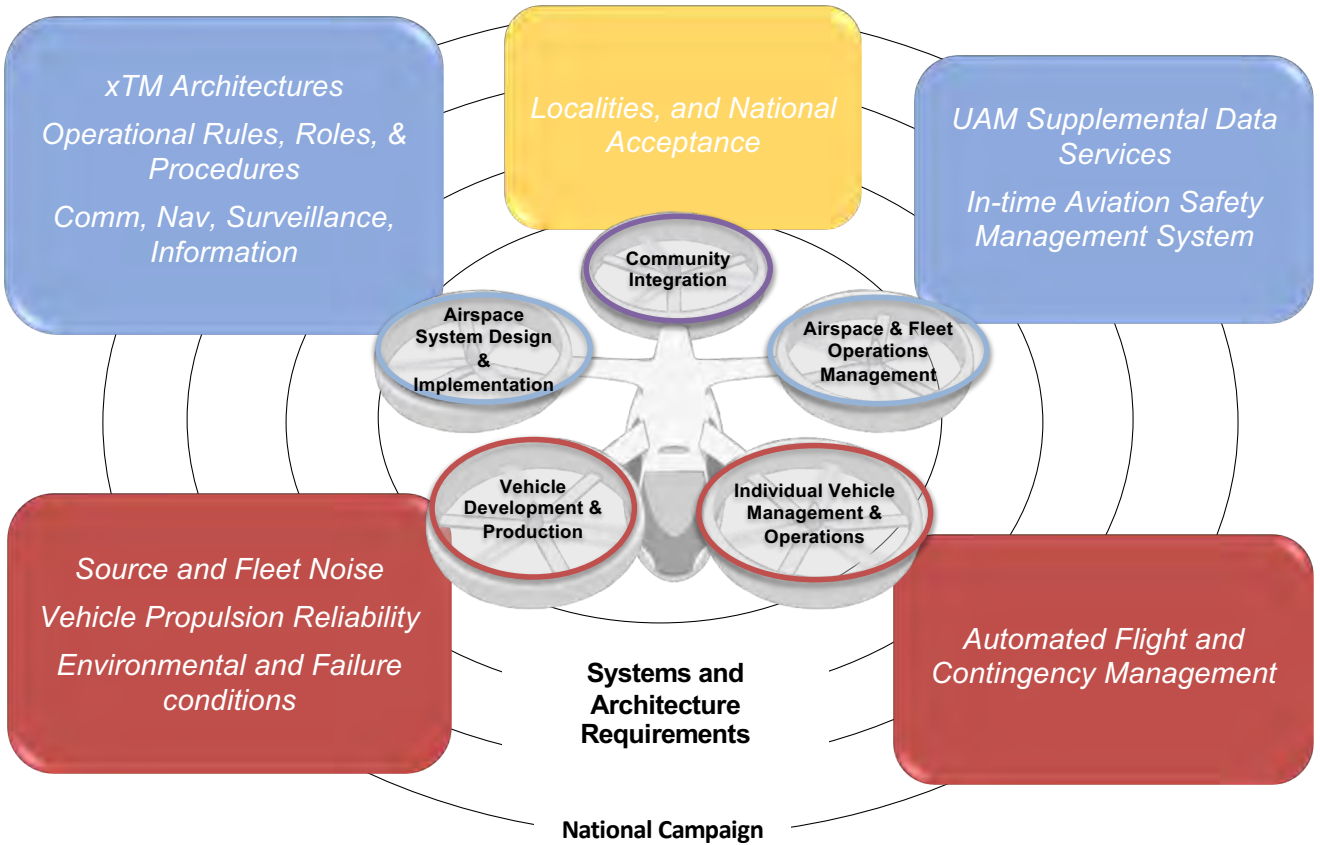
High Rate Composites
6x manufacturing rate increase

Transonic Truss-Braced Wing
5%-10% fuel burn benefit

Ensure U.S. industry is the first to establish the new “S Curve” for the next 50 years of transports

X-57 Maxwell All-Electric Aircraft

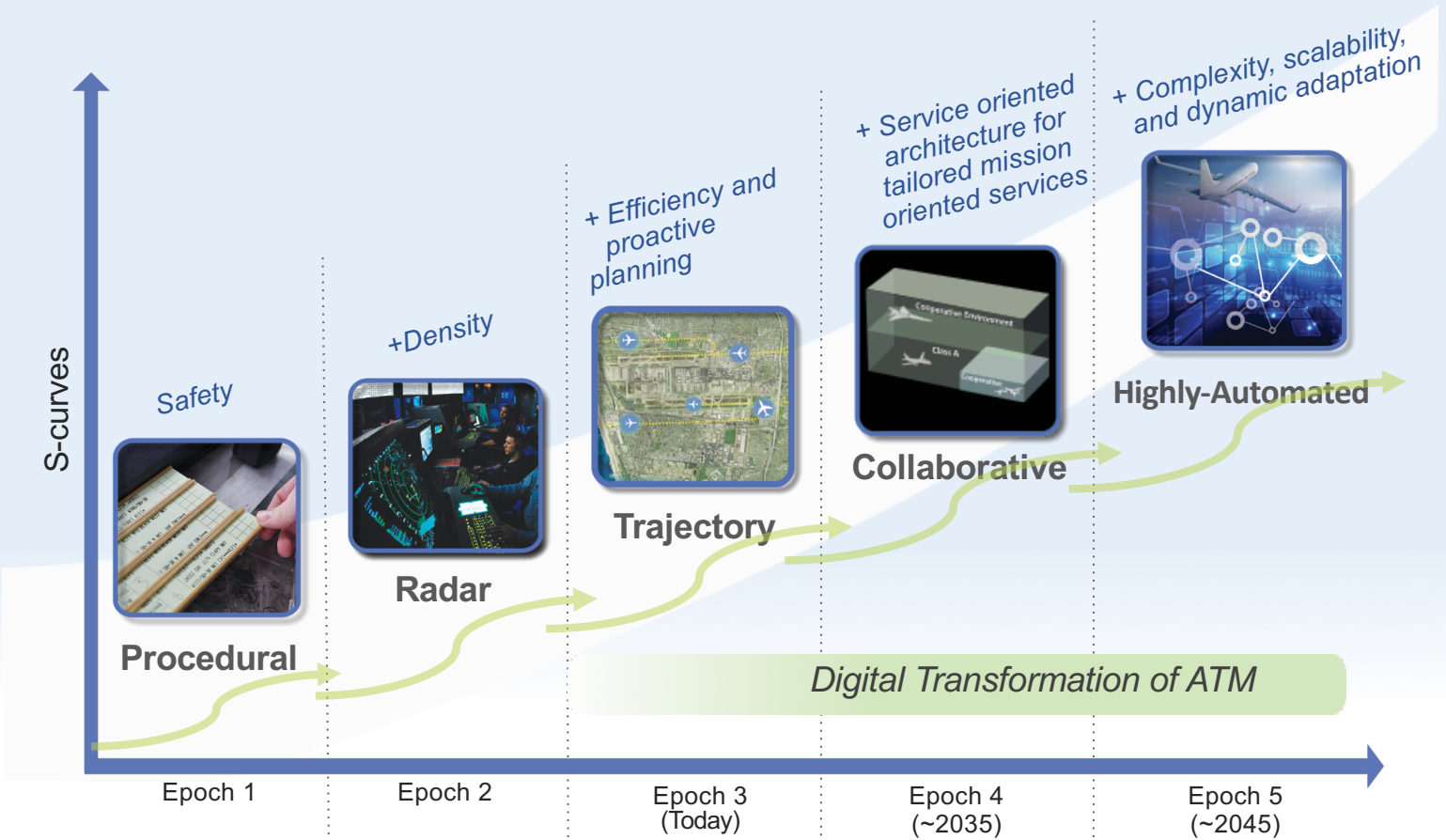
NASA AAM Mission Priorities



ARMD supports the AAM Mission across multiple projects including
AAM, ATM eXploration, Revolutionary Vertical Lift Technology, System-Wide Safety,
Flight Demos and Capabilities, and Transformative Tools and Technologies

Beyond NextGen: A More Dynamic and Collaborative Airspace

Cornerstone Initiative to Enable the Future of Aviation



Other Key Portfolio Elements

Hypersonics Technology Project

- Focus is fundamental research and a strong partnership with DoD
- Commercial opportunities are being evaluated based on industry interest
- Strong stakeholder interest

Transformative Aeronautical Concepts Program

- Long-term concepts and innovation supports future project content and long-term U.S. technological leadership
- Fundamental development of physics-based methods and multi-disciplinary optimization underlies U.S. aerospace design and analysis capability

Aero Test and Evaluation Capability Portfolio

- Sustain large wind tunnel portfolio for NASA, including ops, maintenance and capability upgrades
- Studying how to manage in a “flat” budget environment

Preparing the next generation of aeronautical innovators

NASA's University Leadership Initiative represents a new type of interaction between ARMD and the university community, where universities take the lead, build their own teams, and set their own research path.

NEXT GENERATION


EXPLORE FLIGHT
WE'RE WITH YOU WHEN YOU FLY
Thank You!